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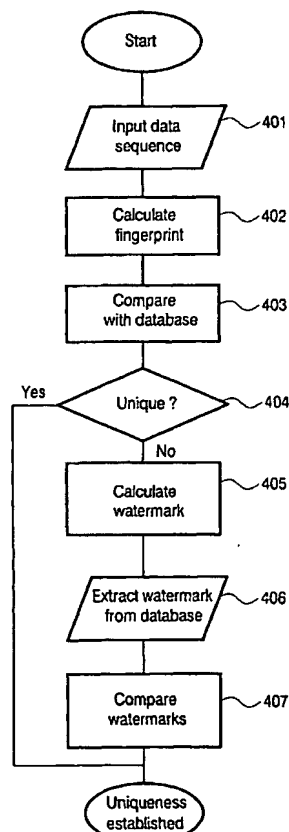
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[Continued on next page]

(54) Title: IDENTIFICATION OF DIGITAL DATA SEQUENCES



(57) Abstract: Identification of a digital media sequence is performed by an encoding and a decoding process. A sequence is received and its digital fingerprint is computed. A database lookup based on the fingerprint produces one or more matches that all resemble the computed fingerprint to a certain degree. If there is more than one match, at least one attempt is made to detect a watermark in the sequence. If a watermark is found, at least part of the watermark is extracted and used to select one of the matches among the sequences that resemble the media sequence to be identified.



ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, INSPEC, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	GB 2 361 136 A (SONY UK LTD) 10 October 2001 (2001-10-10) cited in the application page 1, line 26 - line 31 page 2, line 10 - line 14; claim 1	1-14
A	EP 1 168 817 A (MATSUSHITA ELECTRIC IND CO LTD) 2 January 2002 (2002-01-02) abstract; claim 1	1-14

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	YIN P ET AL: "CLASSIFICATION OF VIDEO TAMPERING METHODS AND COUNTERMEASURES USING DIGITAL WATERMARKING" PROCEEDINGS OF THE SPIE, SPIE, BELLINGHAM, VA, US, vol. 4518, 21 August 2001 (2001-08-21), pages 239-246, XP008026987 ISSN: 0277-786X page 245, paragraph 3 - paragraph 4 ---	1-14
A	DITTMANN J ET AL: "CONTENT-FRAGILE WATERMARKING BASED ON CONTENT-BASED DIGITAL SIGNATURES" INTERACTIVE DISTRIBUTED MULTIMEDIA SYSTEMS AND TELECOMMUNICATION SERVICES, XX, XX, 1999, pages 259-272, XP000980062 ---	
A	DITTMANN J ET AL: "CONTENT-BASED DIGITAL SIGNATURE FOR MOTION PICTURES AUTHENTICATION AND CONTENT-FRAGILE WATERMARKING" PROCEEDINGS OF THE INTERNATIONAL CONFERENCE ON MULTIMEDIA COMPUTING AND SYSTEMS, LOS ALAMITOS, CA, US, vol. 2, June 1999 (1999-06), pages 209-213, XP000939251 -----	

INTERNATIONAL SEARCH REPORT

International Application No
PCT/03/02812

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
GB 2361136	A	10-10-2001	AU 4436401 A	15-10-2001
			CN 1381023 T	20-11-2002
			EP 1190386 A2	27-03-2002
			WO 0175794 A2	11-10-2001
			JP 2003529987 T	07-10-2003
			US 2002138734 A1	26-09-2002
<hr/>				
EP 1168817	A	02-01-2002	JP 2002007977 A	11-01-2002
			EP 1168817 A2	02-01-2002
			US 2001054149 A1	20-12-2001
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